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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,424	09/02/2004	Yoshikazu Makioka	SAE-0030	1252
23353 7590 07/25/2008 RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036				
EXAMINER HAYLIN, ROBERT H				
ART UNIT		PAPER NUMBER		
1626				
MAIL DATE		DELIVERY MODE		
07/25/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/506,424

Applicant(s)

MAKIOKA ET AL.

Examiner

ROBERT HAVLIN

Art Unit

1626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-26 is/are pending in the application.
4a) Of the above claim(s) 14 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 15-26 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
3) ☒ Information Disclosure Statement(s) (PTO/SE-08)
Paper No(s)/Mail Date 4/25/08
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Status of the claims: Claims 14-26 are currently pending. Claims 20-26 were newly presented.

Priority: This application is a 371 of PCT/JP03/02422 (03/03/2003) and claims foreign priority to JAPAN 2002057419 (03/04/2002).

IDS: The IDS dated 4/25/08 was considered.

RESPONSE TO APPLICANT ARGUMENTS

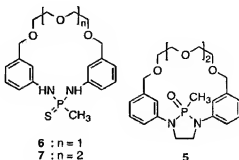
Claim Rejections - 35 USC § 103

1. Claims 15-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Delangle et al. (J. Org. Chem, 1996, v. 61, p. 8904-14) in view of Alberts et al. (J. Am. Chem. Soc., 1979, v. 101, p.3545-53).

Applicant argues that the references do not teach or suggest the phosphoramidate compound of formula [1] and the references do not teach or suggest the extracting of rare earth metal ions.

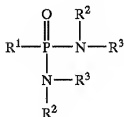
Applicant's argument as to the nonobviousness of the claims for a failure to teach a compound of formula [1] is not persuasive. The Delangle reference teaches "macrocyclic phosphoramides as promising ligands for alkali metal and ammonium

cations.” Delangle teaches specific compounds which are macrocyclic



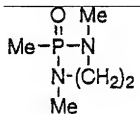
phosphoramides including the species of

The instant claims are defined generically using an agent of the formula



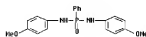
where the R³'s are defined to include alkyl and aryl groups which may

have a substituent, which can include a hydroxyl group and can be joined together to



form an alkylene group and includes species such as

and



Here the prior art and the instant claims teach the same core as in the instant formula [1] and the prior art teaches macrocyclic forms of the core formula as ligands for metals.

Thus the reference teaches compounds that readily coordinate metal ions that have close structural similarities as is instantly claimed. Structural similarities are appropriate in supporting obviousness, for example, in *In re Merck & Co.*, claims to

amitriptyline used as an antidepressant were held obvious in light of the structural similarity to imipramine, a known antidepressant prior art compound, where both compounds were tricyclic dibenzo compounds and differed structurally only in the replacement of the unsaturated carbon atom in the center ring of amitriptyline with a nitrogen atom in imipramine. In re Merck & Co., 800 F.2d 1091, 1096-97, 231 USPQ 375, 378-79 (Fed. Cir. 1986). Other structural similarities have been found to support a prima facie case of obviousness. See, e.g., In re May, 574 F.2d 1082, 1093-95, 197 USPQ 601, 610-11 (CCPA 1978) (stereoisomers); In re Wilder, 563 F.2d 457, 460, 195 USPQ 426, 429 (CCPA 1977) (adjacent homologs and structural isomers); In re Hoch, 428 F.2d 1341, 1344, 166 USPQ 406, 409 (CCPA 1970) (acid and ethyl ester); In re Druey, 319 F.2d 237, 240, 138 USPQ 39, 41 (CCPA 1963) (omission of methyl group from pyrazole ring).

Applicant also argues that the references do not teach or suggest the extracting of rare earth metal ions. This argument is also not persuasive because rare earth metal ions are readily within the technical grasp of one of ordinary skill in the art and, as described in the prior office action, Delangle teaches complexing of metal ions and cites to a method of Alberts which specifically teaches rare earth metal ions. Applicant appears to argue on page 7 that Delangle teaches away from rare earth metal ions because the reference discusses how "minor changes in structure can have an impact on the types of metals to which it can form a complex." However, this is not a teaching away from rare earth metals and, in fact, shows that one of ordinary skill in the art would

expect the compounds taught therein to form complexes with any other metals listed in the periodic table, including rare earth metals.

Furthermore, the MPEP states

that a prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness; however, "the nature of the teaching is highly relevant and must be weighed in substance. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994).

Therefore, because the prior art teaches rare earth metals in context with a structurally similar compound to complex and extract metal ions, the claims remain obvious and **the rejection maintained.**

The examiner would also like to make the following prior art of record because it exemplifies the state of the art at the time of invention:

US 5,708,958 "Method of separating trivalent actinides and rare earth elements"

Laskorin et al., CAPLUS Abstract of Radiokhimiya (1976), 18(3), 403-6, "Effect of structure on the extraction capacity of phosphorus acid amides."

Laskorin et al., CAPLUS Abstract of Radiokhimiya (1984), 26(2), 161-6, "Quantitative relations between structure, electron donor capacity, and extraction capacity of heteroorganic compounds."

Berkova et al., CAPLUS Abstract of Zhurnal Obshchei Khimii (1977), 47(6), 1431-2, "Contact contribution to proton and phosphorus-31 lanthanide shifts in NMR spectra of

Phosphonates.”

De Bolster, et al., CAPLUS Abstract of Recueil des Travaux Chimiques des Pays-Bas (1971), 90(11), 1153-65, “Coordination chemistry of phenylbisdimethylaminophosphine oxide.”

NEW CLAIM REJECTIONS

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 21-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly presented claims are for a subgenus of claim 15 which does not have support in the original specification. Nowhere in the original claims or specification is a subgenus described where, for example, R1 is fixed as phenyl. Furthermore, the written description as supported by chemical formulas and reduction to practice of such as subgenus is insufficient to support claims to such a subgenus. As another example of a new matter problem with the new claims, nowhere in the original disclosure is the negative limitation of “not a crown ether moiety” found.

Conclusion

4. All claims are rejected. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HAVLIN whose telephone number is (571)272-9066. The examiner can normally be reached on Mon. - Fri., 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor, Joe McKane can be reached at (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert Havlin
Examiner

/Kamal A Saeed, Ph.D./
Primary Examiner, Art Unit 1626